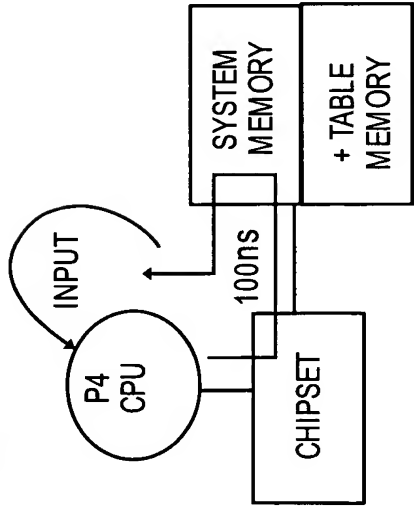




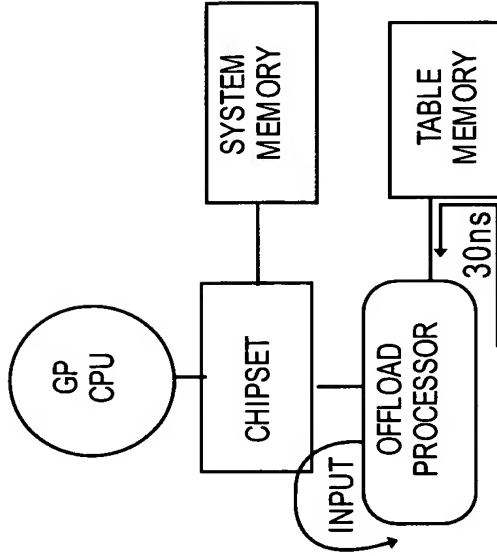
PROPERTIES OF DFA AND NFA TECHNIQUES USED ON CONVENTIONAL MICROPROCESSORS	STORAGE: BOUND ON # OF STATES (FOR R CHARACTER REGULAR EXPRESSION)	EVALUATION TIME (FOR N BYTES OF INPUT) [ORDER OF]
DETERMINISTIC FINITE STATE AUTOMATA OR DFA RUNNING ON A GP CPU	2^R (NEEDS VERY LARGE MEMORY)	N MEMORY ACCESS CYCLES
NON-DETERMINISTIC FINITE STATE AUTOMATA OR NFA RUNNING ON A GP CPU	R	$R * N$ CPU CACHE+BRANCH CYCLES

FIG. 1A
(PRIOR ART)

CPU WALKING DFA TABLE IN DRAM



COPROCESSOR CLOSER TO TABLE IN SRAM



PERFORMANCE ON EVALUATING REGULAR EXPRESSIONS ON EVERY BYTE OF INPUT STREAM

1000s OF RES @ 100 Mbps

GIGABYTES OF MEMORY

100s OF RES @ 280 Mbps

100s OF MBs OF SRAM

FIG. 1B
(PRIOR ART)

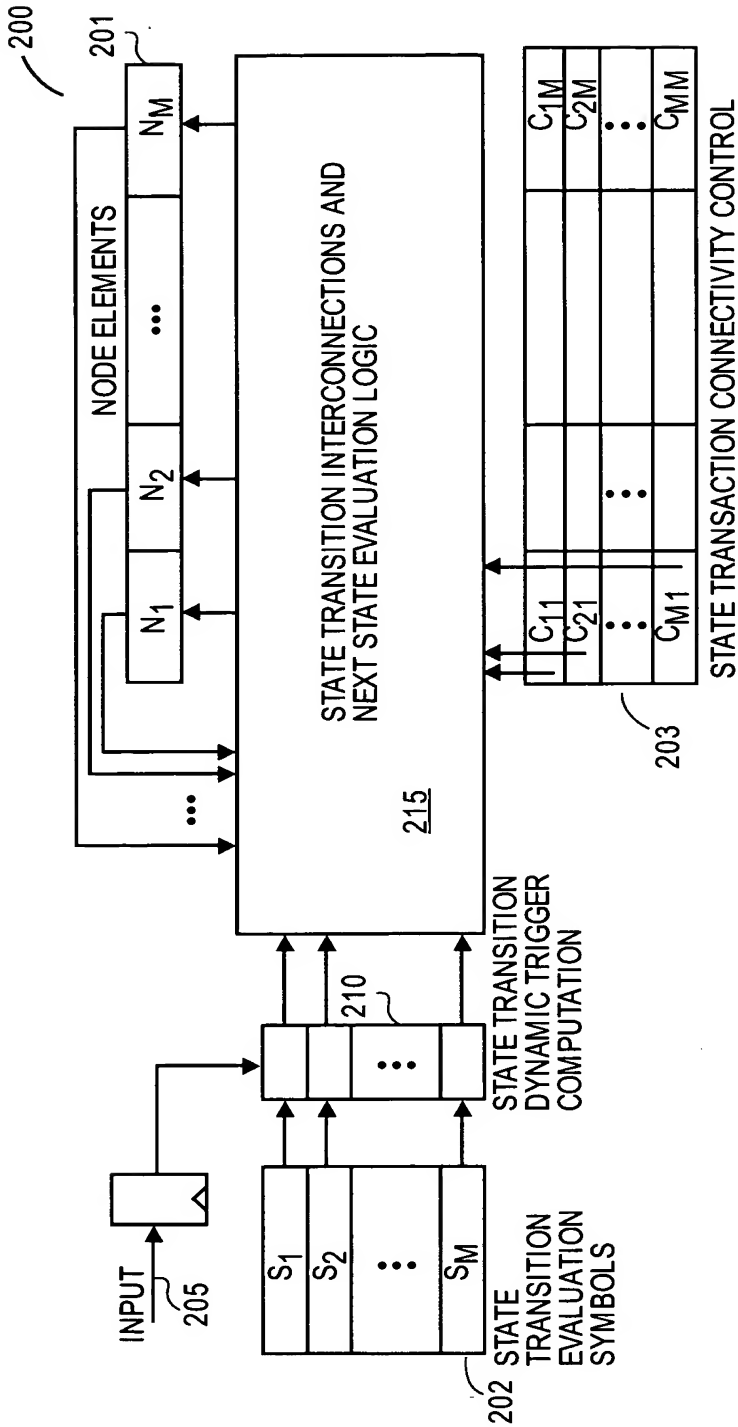


FIG. 2

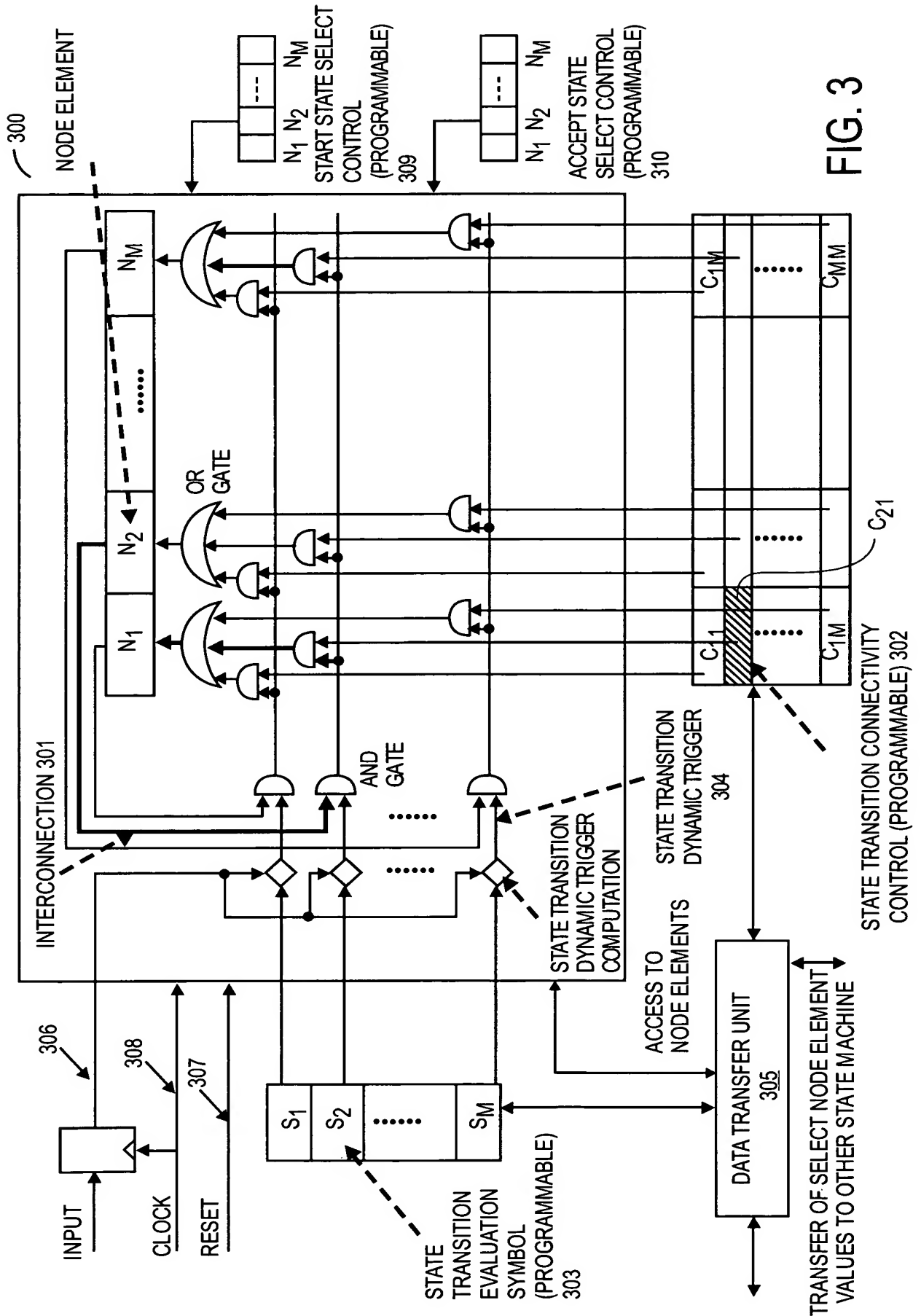


FIG. 3

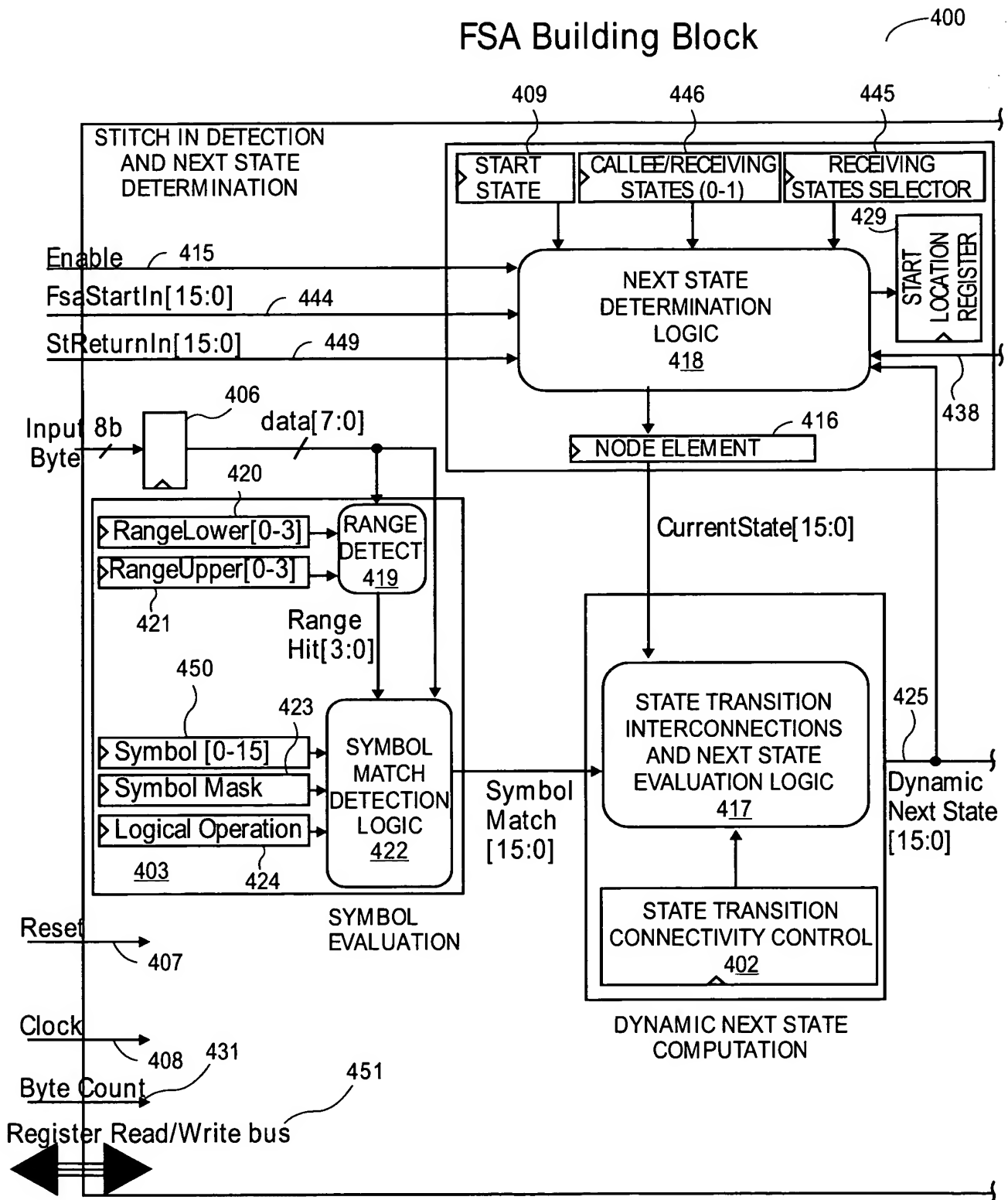


FIG. 4

FSA Building Block

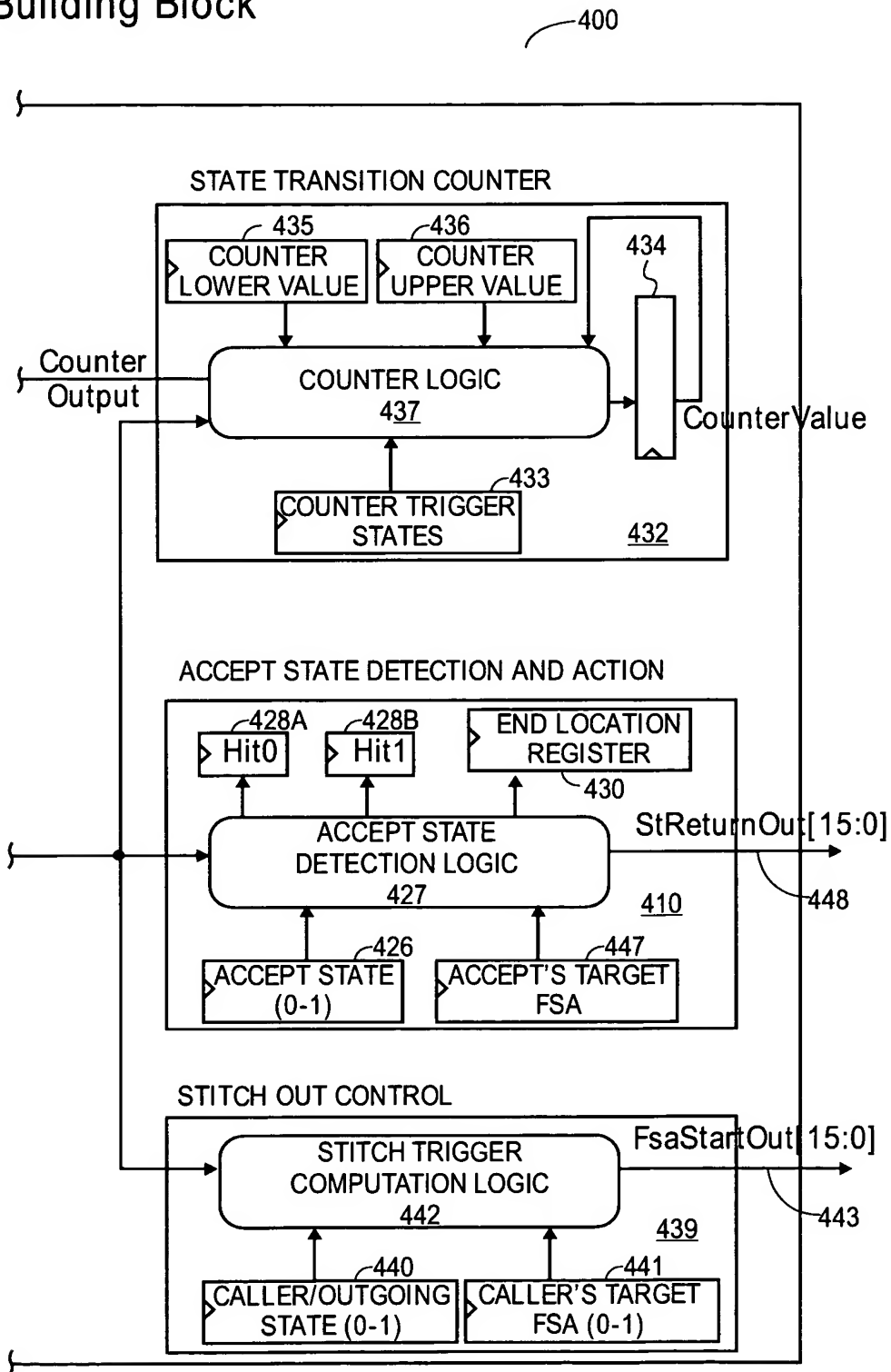


FIG. 4 (CONT.)

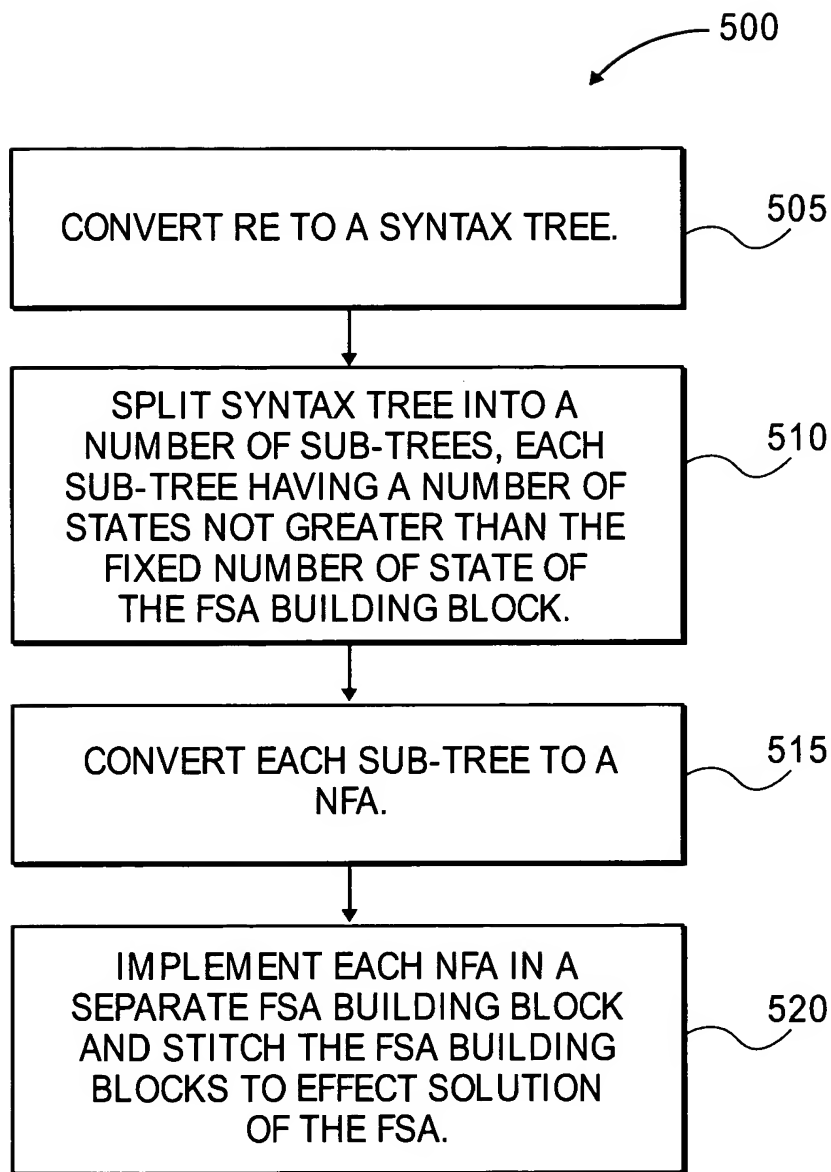


FIG. 5

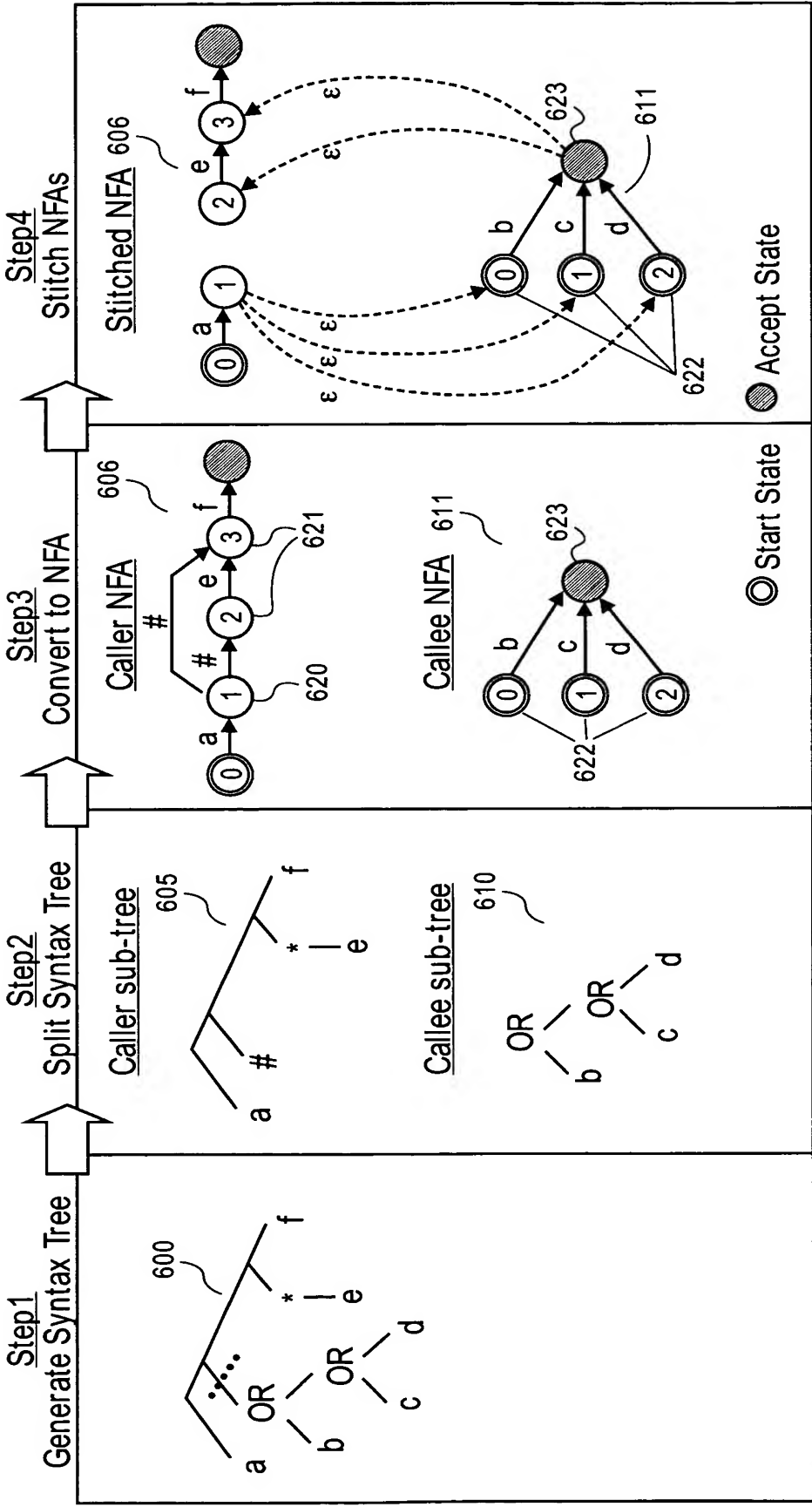


FIG. 6A

FIG. 6B

FIG. 6C

FIG. 6D

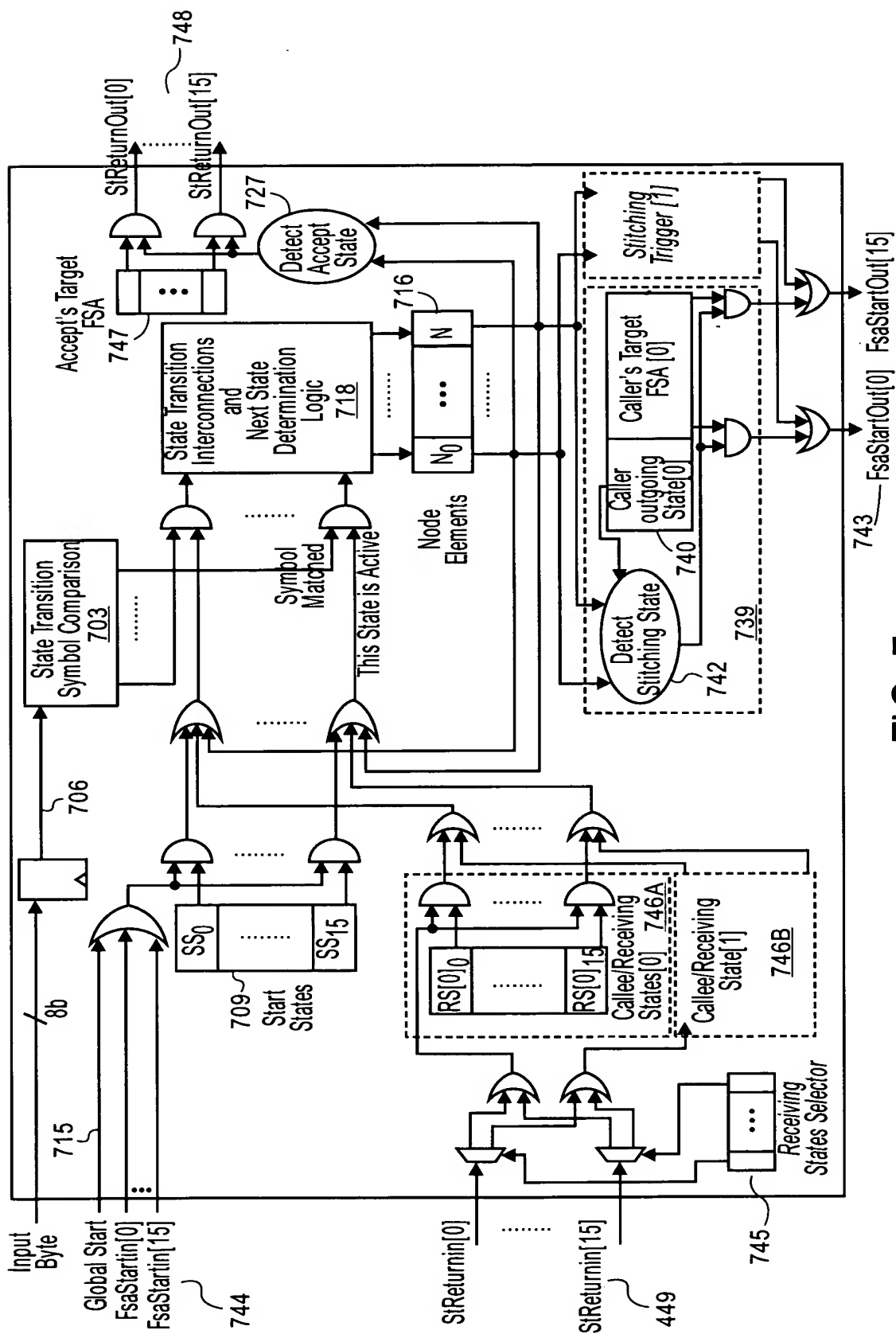


FIG. 7

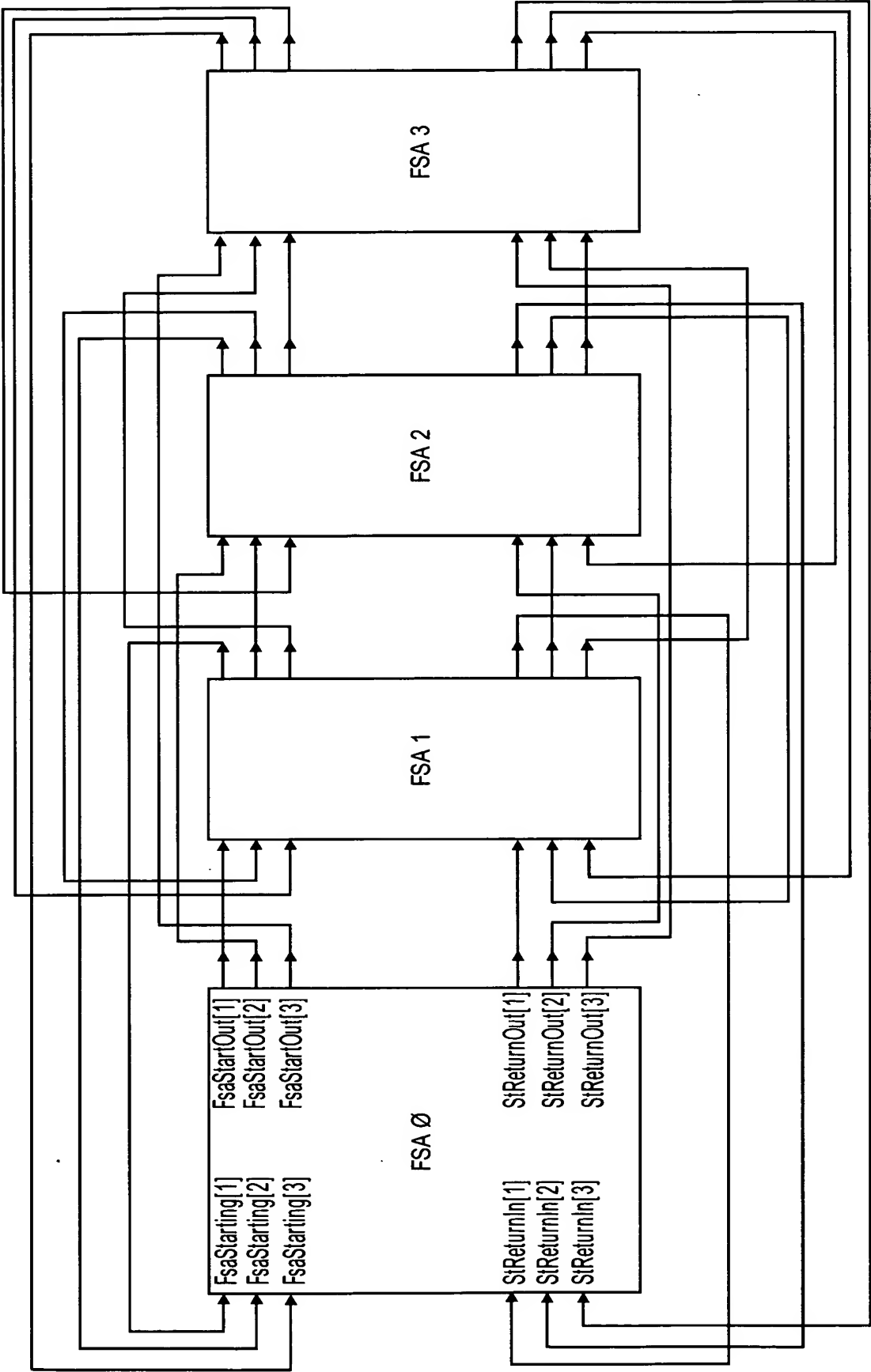


FIG. 8

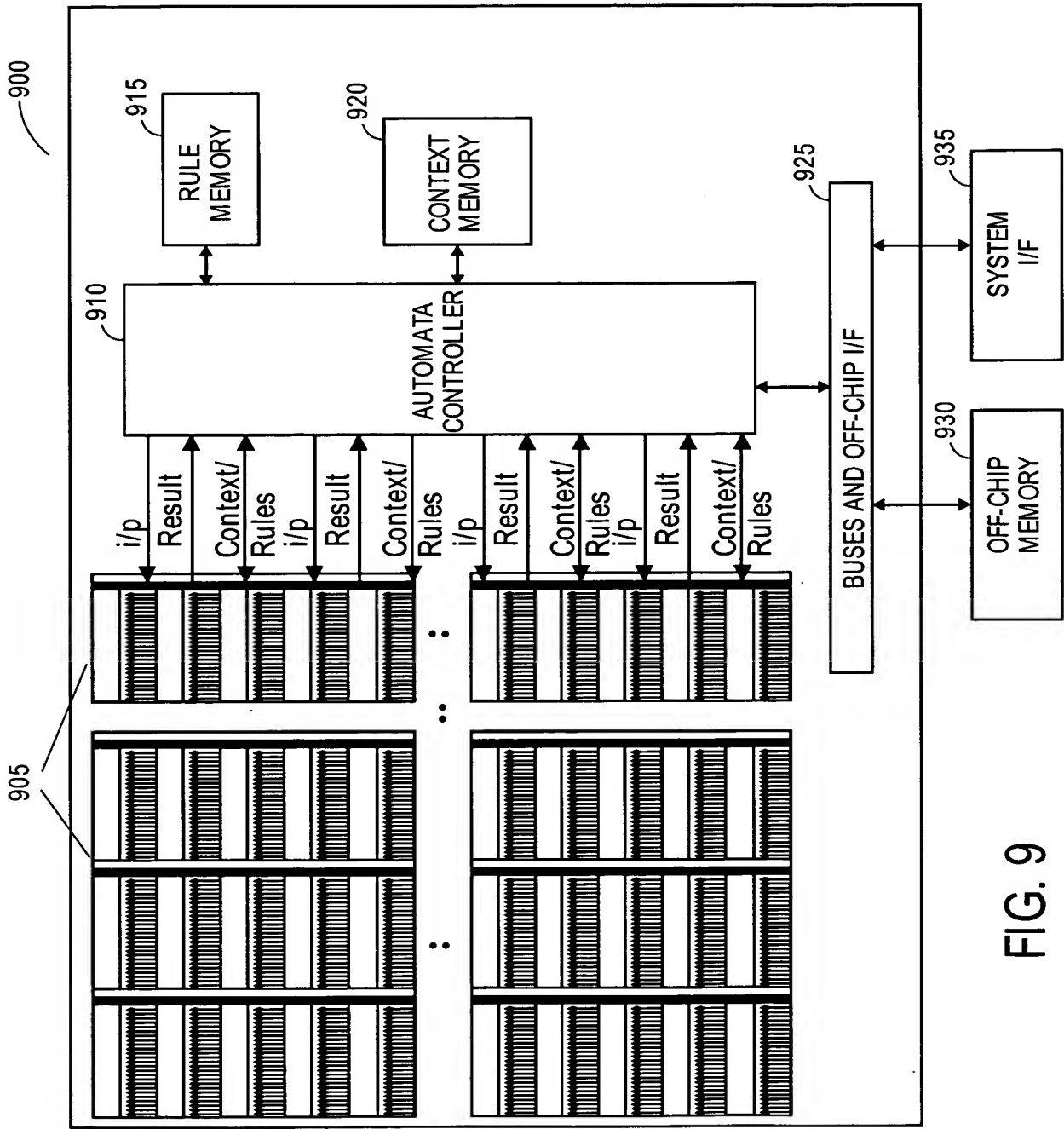


FIG. 9